AMENDMENTS TO THE CLAIMS

1-66. (Canceled)

67. (Previously Presented) A method for determining a stability of substantially continuous glucose sensor, the method comprising:

receiving a data stream from a continuous glucose sensor, including one or more sensor data points; and

determining a stability of the continuous glucose sensor, wherein the step of determining a stability is performed in real-time.

68. (Previously Presented) The method of claim 67, wherein the step of determining a stability comprises determining a level of stability based on an oxygen concentration.

69. (Previously Presented) The method of claim 67, wherein the step of determining a stability comprises determining a baseline drift or offset.

70. (Previously Presented) The method of claim 67, wherein the step of determining a stability comprises monitoring the frequency content of the sensor data stream over a predetermined amount of time.

71. (Previously Presented) The method of claim 67, wherein the step of determining the stability of the substantially continuous glucose sensor comprises evaluating one of pH, oxygen, hypochlorite, interfering species, correlation of matched pairs, R-value, baseline drift, baseline offset, and amplitude.

72. (Previously Presented) The method of claim 67, further comprising providing one of an audible, visual, or tactile output to a user based on the stability of said sensor.

73. (Previously Presented) The method of claim 72, wherein the step of providing output based on the stability of said sensor comprises indicating at least one of a numeric estimated glucose value, a directional trend of glucose concentration, and a graphical representation of an estimated glucose value.

74. (Previously Presented) The method of claim 67, further comprising receiving reference data from a reference glucose monitor, including one or more reference data

points, and wherein the step of receiving reference data comprises receiving reference data from a blood glucose test.

75. (Previously Presented) The method of claim 67, further comprising receiving reference data from a reference glucose monitor, including one or more reference data points, and wherein the step of receiving reference data from a reference glucose monitor comprises receiving within a receiver internal communication from a reference glucose monitor integral with said receiver.

76. (Previously Presented) A system for determining a stability of continuous glucose sensor, comprising:

a sensor data module operatively connected to a continuous glucose sensor that receives a data stream comprising a plurality of time spaced sensor data points from the glucose sensor; and

a processor module programmed to determine the stability of the continuous glucose sensor in real-time.

77. (Previously Presented) The system of claim 76, wherein the predetermined level of stability is based on an oxygen concentration.

78. (Previously Presented) The system of claim 76, wherein the predetermined level of stability is determined by an assessment of baseline drift or offset.

79. (Previously Presented) The system of claim 76, wherein the predetermined level of stability is determined by monitoring the frequency content of the sensor data stream over a predetermined amount of time.

80. (Previously Presented) The system of claim 76, wherein said processor module is programmed to evaluate one of pH, oxygen, hypochlorite, interfering species, correlation of matched pairs, R-value, baseline drift, baseline offset, and amplitude.

81. (Previously Presented) The system of claim 76, further comprising an output module associated with said processor module and programmed to control output of sensor data.

82. (Previously Presented) The system of claim 81, wherein said output module indicates at least one of a numeric estimated glucose value, a directional trend of glucose concentration, and a graphical representation of an estimated glucose value.

83. (Previously Presented) The system of claim 76, further comprising a reference input module configured to receive reference data from a blood glucose test, wherein the reference data comprises one or more reference data points.

84. (Previously Presented) The system of claim 76, further comprising a reference glucose monitor integral with the system and wherein the system further comprises a reference input module configured to receive an internal communication from the reference glucose monitor, wherein the internal communication comprises one or more reference data points.

85. (Previously Presented) A computer system for initializing a continuous glucose sensor, the computer system comprising:

a sensor data receiving module that receives sensor data from the substantially continuous glucose sensor via a receiver, including one or more sensor data points;

a reference data receiving module that receives reference data from a reference glucose monitor, including one or more reference data points;

a data matching module that forms one or more matched data pairs by matching reference data to substantially time corresponding sensor data; and

a stability determination module that determines the stability of the continuous glucose sensor in real-time.

86. (Previously Presented) The computer system of claim 85, wherein said stability determination module evaluates one of pH, oxygen, hypochlorite, interfering species, correlation of matched pairs, R-value, baseline drift, baseline offset, and amplitude.

87. (Previously Presented) The computer system of claim 85, further comprising an interface control module that provides output to the user based on the stability of said sensor.

88. (Previously Presented) The computer system of claim 87, wherein said output from said interface control module comprises at least one of a numeric estimated glucose value, an indication of directional trend of glucose concentration, and a graphical representation of an estimated glucose value.

89. (Previously Presented) The computer system of claim 85, wherein said reference data receiving module is adapted to receive sensor data from a blood glucose test.

90. (Previously Presented) The computer system of claim 85, wherein said reference data receiving module is adapted to receive reference data from an internal reference glucose monitor that is housed integrally said computer system.

91. (Previously Presented) A method for initializing a substantially continuous glucose sensor, the method comprising:

receiving sensor data from a substantially continuous glucose sensor, including one or more sensor data points;

forming one or more matched data pairs by matching reference data to substantially time corresponding sensor data; and

providing output reflective of said sensor data after a predetermined level of stability has been determined.

92. (Previously Presented) The method of claim 91, wherein determining the stability of the substantially continuous glucose sensor comprises waiting a predetermined time period between about one minute and about six weeks.

93. (Previously Presented) The method of claim 91, further comprising receiving reference data from a reference glucose monitor, including one or more reference data points and providing at least one matched data pair by matching reference glucose data to substantially time corresponding sensor data, and wherein the step of determining the stability of the substantially continuous glucose sensor comprises evaluating said at least one matched data pair.

94. (Previously Presented) The method of claim 91, wherein determining the stability of the substantially continuous glucose sensor comprises evaluating one of pH, oxygen, hypochlorite, interfering species, correlation of matched pairs, R-value, baseline drift, baseline offset, and amplitude.

95. (Previously Presented) The method of claim 91, wherein the step of providing output comprises providing at least one of an audible, visual, or tactile output to a user based on the stability of said sensor.

96. (Previously Presented) The method of claim 95, wherein the step of providing output based on the stability of said sensor comprises indicating at least one of a

numeric estimated glucose value, a directional trend of glucose concentration, and a graphical representation of an estimated glucose value.

97. (Previously Presented) The method of claim 91, further comprising receiving reference data from a reference glucose monitor, including one or more reference data points, and wherein the step of receiving reference data comprises receiving reference data from a blood glucose test.

98. (Previously Presented) The method of claim 91, further comprising receiving reference data from a reference glucose monitor, including one or more reference data points, and wherein the step of receiving reference data from a reference glucose monitor comprises receiving within a receiver internal communication from a reference glucose monitor integral with said receiver.

99. (Previously Presented) A system for initializing a continuous glucose sensor, comprising:

a sensor data module operatively linked to a continuous glucose sensor and configured to receive one or more sensor data points from said sensor;

a processor module associated with the sensor data module and the input module and programmed to match reference data points with time-matched sensor data points to form a calibration set comprising at least one matched data pair; and

a start-up module associated with said processor module programmed to output information reflective of said sensor data after a predetermined level of stability has been determined.

100. (Previously Presented) The system of claim 99, wherein said processor module is programmed to wait a predetermined time period between six hours and six weeks.

101. (Previously Presented) The system of claim 99, wherein said processor module is programmed to evaluate one of pH, oxygen, hypochlorite, interfering species, correlation of matched pairs, R-value, baseline drift, baseline offset, and amplitude.

102. (Previously Presented) The system of claim 99, further comprising an output module associated with said processor module and programmed to control output of sensor data.

103. (Previously Presented) The system of claim 102, wherein said output module indicates at least one of a numeric estimated glucose value, a directional trend of glucose concentration, and a graphical representation of an estimated glucose value.

104. (Previously Presented) The system of claim 99, further comprising a reference input module configured to receive reference data from a blood glucose test, wherein the reference data comprises one or more reference data points.

105. (Previously Presented) The system of claim 99, further comprising a reference glucose monitor integral with the system and wherein the system further comprises a reference input module configured to receive an internal communication from the reference glucose monitor, wherein the internal communication comprises one or more reference data points.

106. (Previously Presented) A method for calibrating data from a glucose sensor, the method comprising:

receiving sensor data from a glucose sensor, including one or more sensor data points;

receiving reference data, including one or more reference data points; and

calibrating the sensor data using the reference data after the glucose sensor has reached a level of stability.

107. (Previously Presented) The method of claim 106, wherein the step of calibrating is only performed if the glucose sensor reaches a predetermined level of stability.

108. (Previously Presented) The method of claim 106, wherein the step of receiving reference data further comprises a step of determining the stability by evaluating said one or more reference data points against one or more time-corresponding sensor data points.

109. (Previously Presented) The method of claim 106, wherein the step receiving reference data comprises receiving data obtained from a blood glucose test.

110. (Previously Presented) The method of claim 106, wherein the step of receiving reference data comprises receiving an internal communication from a reference glucose monitor integral with said receiver.

111. (Previously Presented) A system for calibrating data from a glucose sensor, the system comprising:

a sensor data module configured to receive sensor data from the glucose sensor, including one or more sensor data points;

a reference input module configured to receive one or more reference glucose points from a reference glucose monitor; and

a processor module configured to calibrate the glucose sensor after the glucose sensor has reached a level of stability.

112. (Previously Presented) The system of claim 111, wherein processor module is configured to calibrate the glucose sensor only after the glucose sensor reaches a predetermined level of stability.

113. (Previously Presented) The system of claim 111, wherein the processor module is configured to determine a stability of the glucose sensor by evaluating one or more reference data points against a substantially time-corresponding sensor data point.

114. (Previously Presented) The system of claim 111, wherein the one or more reference data points are obtained from a blood glucose test.

115. (Previously Presented) The system of claim 111, wherein the one or more reference data points are obtained from a reference glucose monitor integral with said system.

116. (Previously Presented) A method for calibrating a continuous glucose sensor, the sensor comprising:

receiving one or more sensor data points from a continuous glucose sensor; and

prompting a user for reference glucose data after a stability of the continuous glucose sensor has been reached.

117. (Previously Presented) A system for calibrating a continuous glucose sensor, the sensor comprising:

a sensor data module operatively linked to a continuous glucose sensor and configured to receive one or more sensor data points from said sensor; and

a processor module programmed to prompt a user for reference glucose data after a stability of the continuous glucose sensor has been reached.

118. (Previously Presented) A system for displaying data from a continuous glucose sensor, the system comprising:

a sensor data receiving module that receives sensor data including one or more sensor data points from the substantially continuous glucose sensor; and

an interface control module that displays sensor data on a user interface after a level of stability has been reached.

119. (Previously Presented) The system of claim 118, wherein the interface control module is configured to alter the user interface in response to a predetermined level of stability.

120. (Previously Presented) The system of claim 119, wherein the interface control module is configured to provide an indication of a level of stability of the sensor data on the user interface.

121. (Previously Presented) The system of claim 120, wherein the indication is selected from the group consisting of: flashing information and faded information.

122. (Previously Presented) The system of claim 118, wherein the interface control module is configured to display sensor data in a format selected from the group consisting of: a numeric glucose value, a directional trend of glucose data, and a graphical representation of glucose data.

123. (Previously Presented) The system of claim 118, wherein the interface control module is configured to display sensor data only after a predetermined level of stability has been reached.

124. (Previously Presented) The system of claim 118, wherein the interface control module is configured to display information on the user interface indicative of a status or level of stability of the sensor data.

125. (Previously Presented) A method for displaying data from a continuous glucose sensor, the method comprising:

receiving sensor data including one or more sensor data points from the substantially continuous glucose sensor; and

displaying sensor data on a user interface after a level of stability has been reached.

126. (Previously Presented) The method of claim 125, wherein the step of displaying sensor data comprises altering the user interface in response to a predetermined level of stability.

127. (Previously Presented) The method of claim 125, further comprising displaying an indication of a level of stability of the sensor data on the user interface.

128. (Previously Presented) The method of claim 127, wherein the indication is selected from the group consisting of: flashing information and faded information.

129. (Previously Presented) The method of claim 125, wherein the step of displaying sensor data on a user interface comprises displaying sensor data in a format selected from the group consisting of: a numeric glucose value, a directional trend of glucose data, and a graphical representation of glucose data.

130. (Previously Presented) The method of claim 125, wherein the step of displaying sensor data on a user interface comprises displaying sensor data only after a predetermined level of stability has been reached.

131. (Previously Presented) The method of claim 125, further comprising displaying information on the user interface indicative of a status or level of stability of the sensor data.

132. (Previously Presented) A method for displaying substantially continuous analyte sensor data, the method comprising:

receiving a data stream from an analyte sensor, the data stream comprising a plurality of sensor data points;

processing the plurality of sensor data points to obtain calibrated continuous sensor data; and

displaying the calibrated continuous sensor data as a graphical representation.

133. (Previously Presented) The method of claim 132, wherein the processing step comprises prospectively calibrating the plurality of sensor data points.

134. (Previously Presented) The method of claim 132, wherein the processing step comprises substantially continuously calibrating the sensor data points to provide substantially continuous real-time analyte value estimates.

135. (Previously Presented) The method of claim 132, wherein the graphical representation is displayed on a substantially pager-sized receiver device.

136. (Previously Presented) The method of claim 132, wherein the graphical representation is displayed on a receiver device configured to be worn by a person.

137. (Previously Presented) The method of claim 132, wherein the graphical representation is displayed on a liquid crystal display screen.

138. (Previously Presented) The method of claim 132, wherein the displaying step comprises displaying historical trend data on a user interface.

139. (Previously Presented) The method of claim 132, wherein the historical trend data comprises real-time data for a predetermined time period.

140. (Previously Presented) The method of claim 132, wherein the displaying step comprises displaying calibrated continuous sensor data selected from the group consisting of approximately 1 hour of the calibrated continuous sensor data, approximately 3 hours of the calibrated continuous sensor data, approximately 9 hours of the calibrated continuous sensor data, and combinations thereof.

141. (Previously Presented) The method of claim 132, wherein the displaying step comprises selectively displaying calibrated continuous sensor data selected from the group consisting of approximately 1 hour of the calibrated continuous sensor data, approximately 3 hours of the calibrated continuous sensor data, approximately 9 hours of the calibrated continuous sensor data.

142. (Previously Presented) A system for displaying continuous analyte sensor data, comprising:

a sensor data module operatively connected to a continuous analyte sensor that receives a data stream comprising a plurality of time spaced sensor data points from the analyte sensor;

a processor module operatively connected to the sensor data module that calibrates the plurality of time spaced sensor data points to obtain calibrated continuous sensor data; and

an interface control module operatively connected to the processor module and configured to display a graphical representation of the calibrated continuous sensor data.

143. (Previously Presented) The system of claim 142, wherein the processor module is configured to prospectively calibrate the plurality of time spaced sensor data points.

144. (Previously Presented) The system of claim 142, wherein the processor module is configured to substantially continuously calibrate the sensor data points to provide substantially continuous real-time sensor data.

145. (Previously Presented) The system of claim 142, wherein the system comprises a substantially pager-sized receiver device and wherein the graphical representation is displayed thereon.

146. (Previously Presented) The system of claim 142, wherein the system comprises a receiver device configured to be worn by a person and wherein the graphical representation is displayed on the receiver device.

147. (Previously Presented) The system of claim 142, wherein the system comprises a liquid crystal display screen and wherein the graphical representation is displayed thereon.

148. (Previously Presented) The system of claim 142, wherein the graphical representation comprises historical trend data displayed on a user interface.

149. (Previously Presented) The system of claim 148, wherein the historical trend data comprises real-time data for a predetermined time period.

150. (Previously Presented) The system of claim 148, wherein the historical trend data is selected from the group consisting of approximately 1 hour of the calibrated continuous sensor data, approximately 3-hours of the calibrated continuous sensor data, approximately 9 hours of the calibrated continuous sensor data, and combinations thereof.

151. (Previously Presented) The system of claim 148, wherein the user interface is configured to selectively display historical trend data selected from the group consisting of approximately 1-hour of the calibrated continuous sensor data, approximately 3 hours of the calibrated continuous sensor data, and approximately 9 hours of the calibrated continuous sensor data.

152. (New) A method for analyzing data from an analyte sensor, the method comprising:

receiving data from the analyte sensor, the data comprising at least one sensor data point;

receiving reference data from a reference analyte monitor, the reference data comprising at least one reference data point; and

determining an acceptability of the sensor data or the reference data by subjecting the reference data and substantially time-corresponding sensor data to a boundary test utilizing boundaries.

153. (New) The method of claim 152, wherein the boundaries are derived from prior information.

154. (New) The method of claim 153, wherein the prior information comprises information obtained from at least one of *in vivo* testing of at least one analyte sensor and *in vivo* use of at least one analyte sensor.

155. (New) The method of claim 152, further comprising a step of determining acceptability of the reference data, wherein a positive determination of acceptability is determined when the reference data and substantially time-corresponding sensor data fall within the boundaries of the boundary test.

156. (New) The method of claim 155, further comprising using the reference data for calibration of the analyte sensor in response to a positive determination of acceptability.

157. (New) The method of claim 155, further comprising requesting additional reference data in response to a negative determination of acceptability.

158. (New) The method of claim 157, further comprising determining acceptability of the additional reference data, wherein a positive determination of acceptability is determined when the additional reference data and substantially time-corresponding sensor data fall within the boundaries of the boundary test.

159. (New) The method of claim 158, further comprising using the additional reference data for calibration of the analyte sensor in response to a positive determination of acceptability of the additional reference data.

160. (New) The method of claim 158, further comprising using the reference data for calibration of the analyte sensor if the additional reference data substantially corresponds to the reference data.

161. (New) A system for analyzing data from an analyte sensor, the system comprising:

a sensor data receiving module configured to receive sensor data from the analyte sensor, the sensor data comprising at least one sensor data point;

a reference data receiving module configured to receive reference data from a reference analyte monitor, the reference data comprising at least one reference data point; and

a processor module configured to determine an acceptability of the sensor data or the reference data by subjecting the reference data and substantially time-corresponding sensor data to a boundary test utilizing boundaries.

162. (New) The system of claim 161, wherein the boundaries are derived from prior information.

163. (New) The system of claim 162, wherein the prior information comprises information obtained from at least one of *in vivo* testing of at least one analyte sensor and *in vivo* use of at least one analyte sensor.

164. (New) The system of claim 161, wherein the processor module is configured to determine an acceptability of the reference data, wherein a positive determination of acceptability is determined when the reference data and substantially time-corresponding sensor data fall within the boundaries of the boundary test.

165. (New) The system of claim 164, wherein the processor module is configured to use the reference data for calibration of the analyte sensor in response to a positive determination of acceptability.

166. (New) The system of claim 164, wherein the processor module is configured to request additional reference data in response to a negative determination of acceptability.

167. (New) The system of claim 166, wherein the processor module is configured to determine acceptability of the additional reference data, wherein a positive determination of acceptability is determined when the additional reference data and substantially time-corresponding sensor data fall within the boundaries of the boundary test.

168. (New) The system of claim 167, wherein the processor module is configured to use the additional reference data for calibration of the analyte sensor in response to a positive determination of acceptability of the additional reference data.

169. (New) The system of claim 167, wherein the processor module is configured to use the reference data for calibration of the analyte sensor if the additional reference data substantially corresponds to the reference data.

170. (New) A system for analyzing data from an analyte sensor, the system comprising:

a sensor data receiving module configured to receive sensor data from the analyte sensor, the sensor data comprising at least one sensor data point;

a reference data receiving module configured to receive reference data from a reference analyte monitor, the reference data comprising at least one reference data point; and

a processor module configured to perform outlier detection on the reference data or the sensor data, wherein the processor module is further configured to calibrate the analyte sensor.

171. (New) The system of claim 170, wherein the processor module is configured to calibrate the analyte sensor after the system has successfully passed outlier detection.

172. (New) The system of claim 170, wherein outlier detection comprises comparing reference data and time-corresponding sensor data to a boundary test.

173. (New) The system of claim 170, wherein the processor module is configured to detect noise in the sensor signal.

174. (New) The system of claim 173, wherein the processor module is configured to calibrate the analyte sensor only when noise is substantially not detected in the sensor signal.